

# PUBLIC NOTICE

PERMIT APPLICATION: NRS 07.105

**APPLICANT:** City of Franklin  
109 3<sup>rd</sup> Avenue South  
P.O. Box 305  
Franklin, Tenn. 37065  
615-791-3218

**LOCATION:** Fivemile Creek and tributary, Fivemile Creek watershed between Harpeth River and Goose Creek bypass, Williamson County 35.3634 °N, -86.8345 °W to 35.8583 °N -86.8372 °W

**WATERSHED DESCRIPTION:** The project is located in the Harpeth River watershed (TN051300204). Fivemile Creek is assessed as not supporting its fish and aquatic life and recreational classified uses and listed as impaired by *E. coli* and sedimentation/siltation caused by riparian and shoreline grazing. The classified uses for Fivemile Creek and its tributary are fish and aquatic life, recreation, livestock watering and wildlife, and irrigation. Fivemile Creek in the project area has a varied substrate of cobble, gravel and bedrock, a top of bank width of 40 to 60 feet and a riparian area of scattered trees. The surrounding land use is rural, residential and agricultural.

Color photos of the stream at the proposed crossings can be viewed on the Internet at <http://www.state.tn.us/environment/wpc/ppo/arap>.

**PROJECT DESCRIPTION:** The project involves the construction of 2,449 linear of 24-inch and 12,611 linear feet of 30-inch gravity sewer along the creek corridor to provide new sewer service to the southern portion of the city of Franklin and Williamson Co. This sewer line will have an 8" reclaimed water line installed in the trench above the sewerlines. The main 30" line will have two crossings, one on Fivemile Creek (A-2) and one on the tributary (A-1). The service lines will have two 12"-lines (B & C), one 18"-line (D), and one 8" line crossing Fivemile Creek (E).

The average distance between the top of creek bank and the proposed line is 100 feet, with the closet point being 40 feet. The applicant proposes excavation by mechanical means until rock is encountered, when rock is encountered controlled blasting will be utilized.

In accordance with the Tennessee Antidegradation Statement (Rule 1200-4-3-.06), the division has determined that the proposed activity will not result in degradation to water quality.

**USGS TOPOGRAPHIC QUADRANGLE:** Bethesda 63 SE

**PERMIT COORDINATOR:** Juliana W. Kyzar

No decision has been made whether to issue or deny this permit. The purpose of this notice is to inform interested parties of this permit application and to ask for comments and information necessary to determine possible impacts to water quality. Persons wishing to comment on the proposal are invited to submit written comments to the department. Written comments must be received within **thirty days of the date that this notice is posted**. Comments will become part of the record and will be considered in the final decision. The applicant's name and permit number should be referenced.

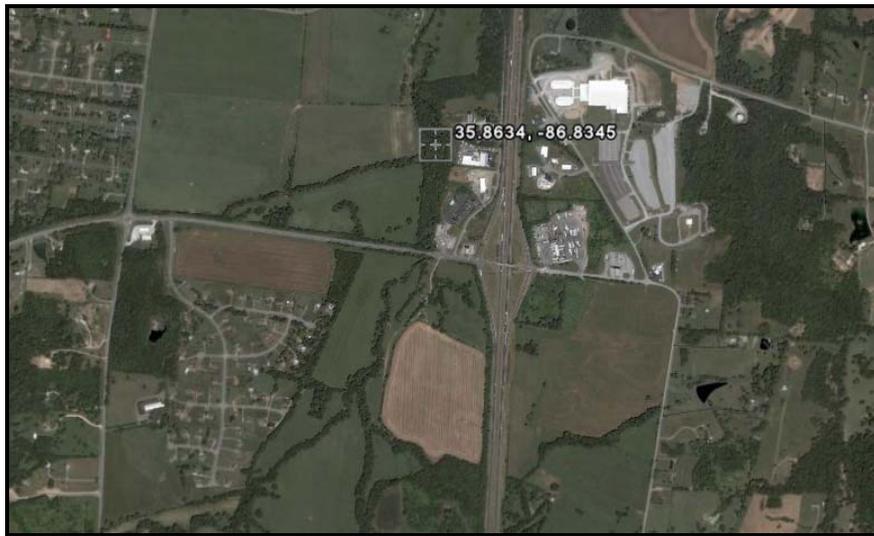
Interested persons may also request in writing that the department hold a public hearing on this application. The request must be filed within the comment period, indicate the interest of the person requesting it, the reasons that the hearing is warranted, and the water quality issues being

raised. When there is sufficient public interest in water quality issues, the department will hold a public hearing.

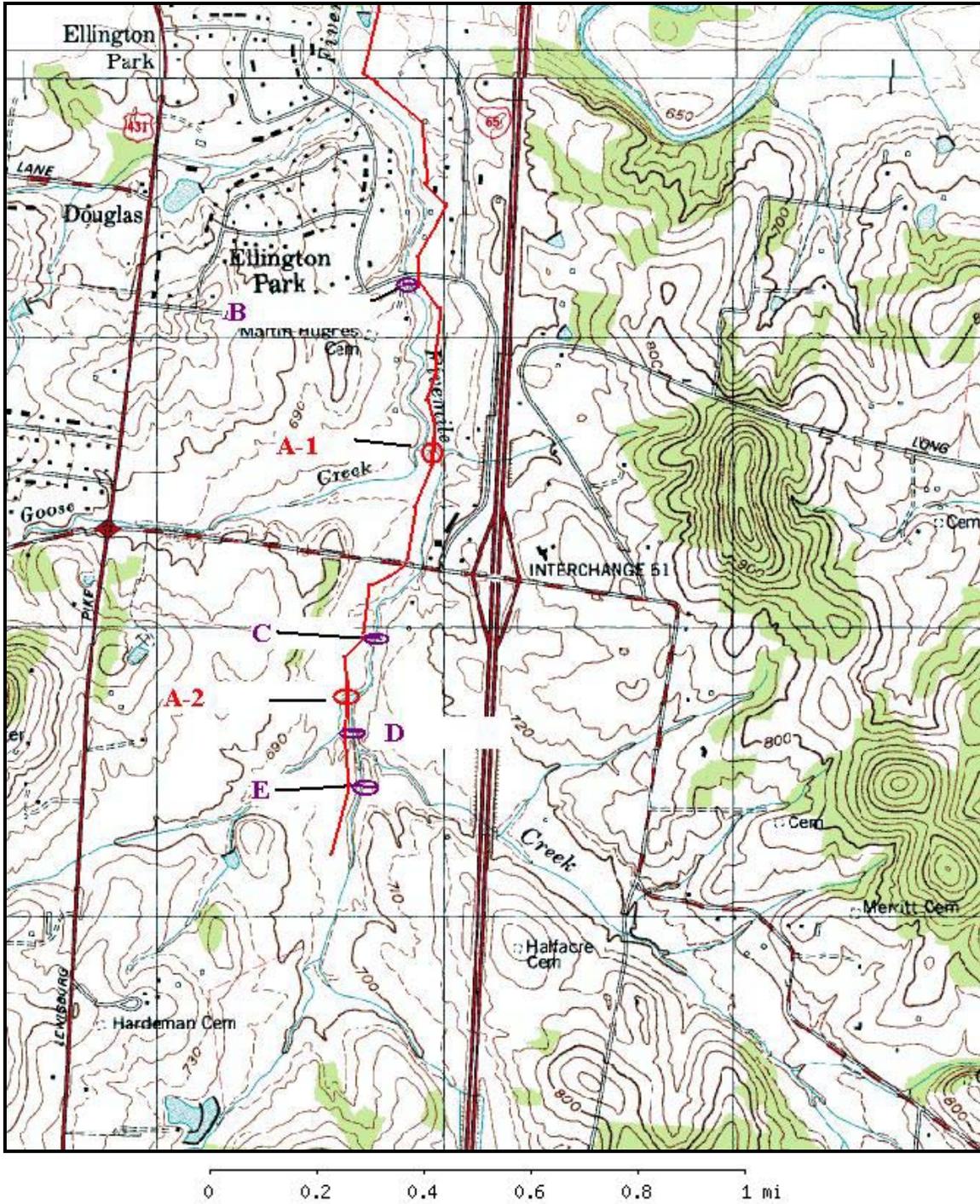
The permit application, supporting documentation including detailed plans and maps, and related comments are available at the department's address for review and/or copying. The department's address is:

Tennessee Department of Environment & Conservation  
Division of Water Pollution Control, Natural Resources Section  
7th Floor L & C Annex  
401 Church Street  
Nashville, TN 37243

In deciding whether to issue or deny a permit, the department will consider all comments on record and the requirements of applicable federal and state laws.



**Figure 1:** Aerial image showing project area (Google Earth)



**Figure 2:** USGS topographic map showing points of sewer line crossings. Approximate alignment added by permit coordinator.

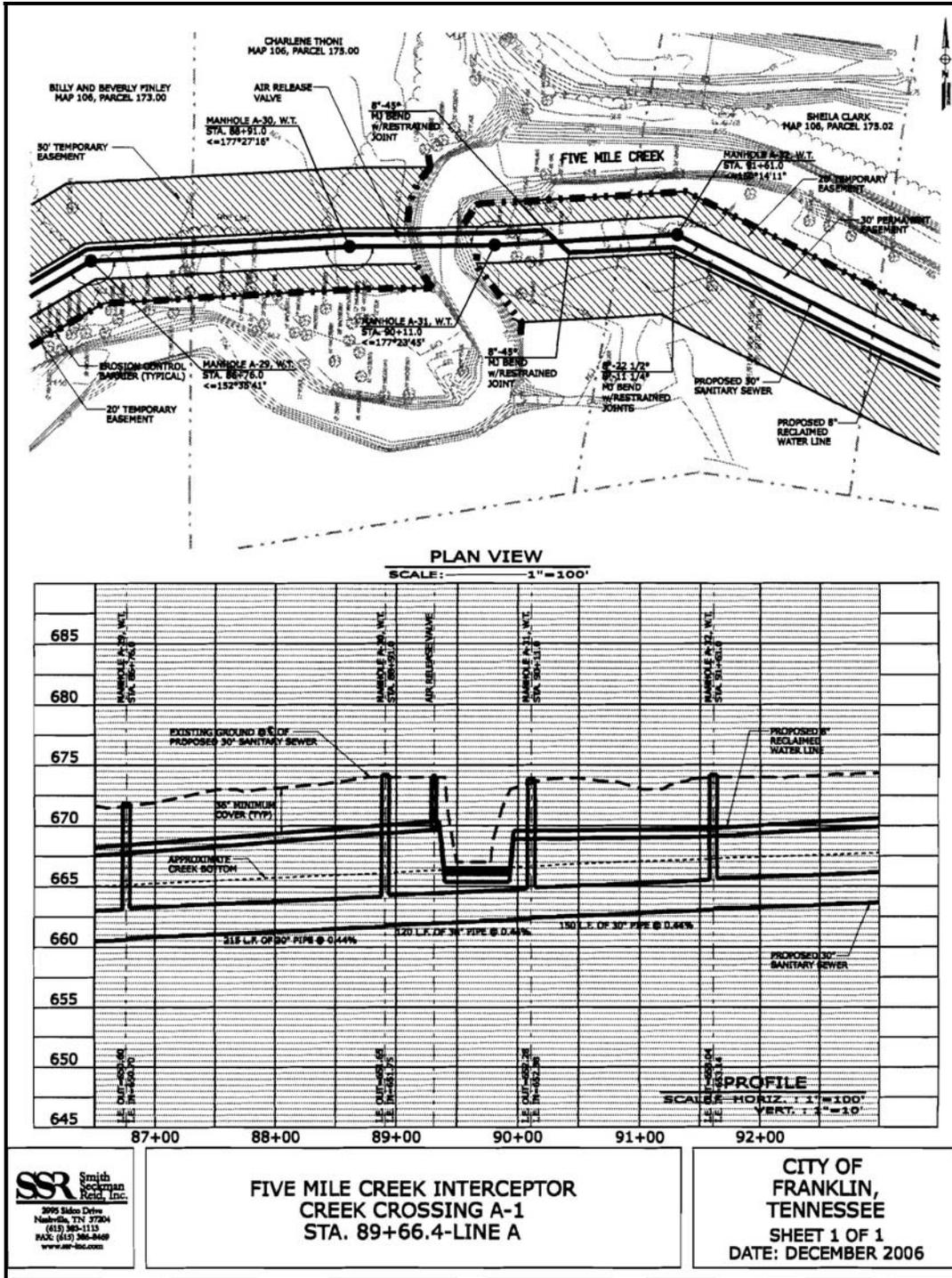
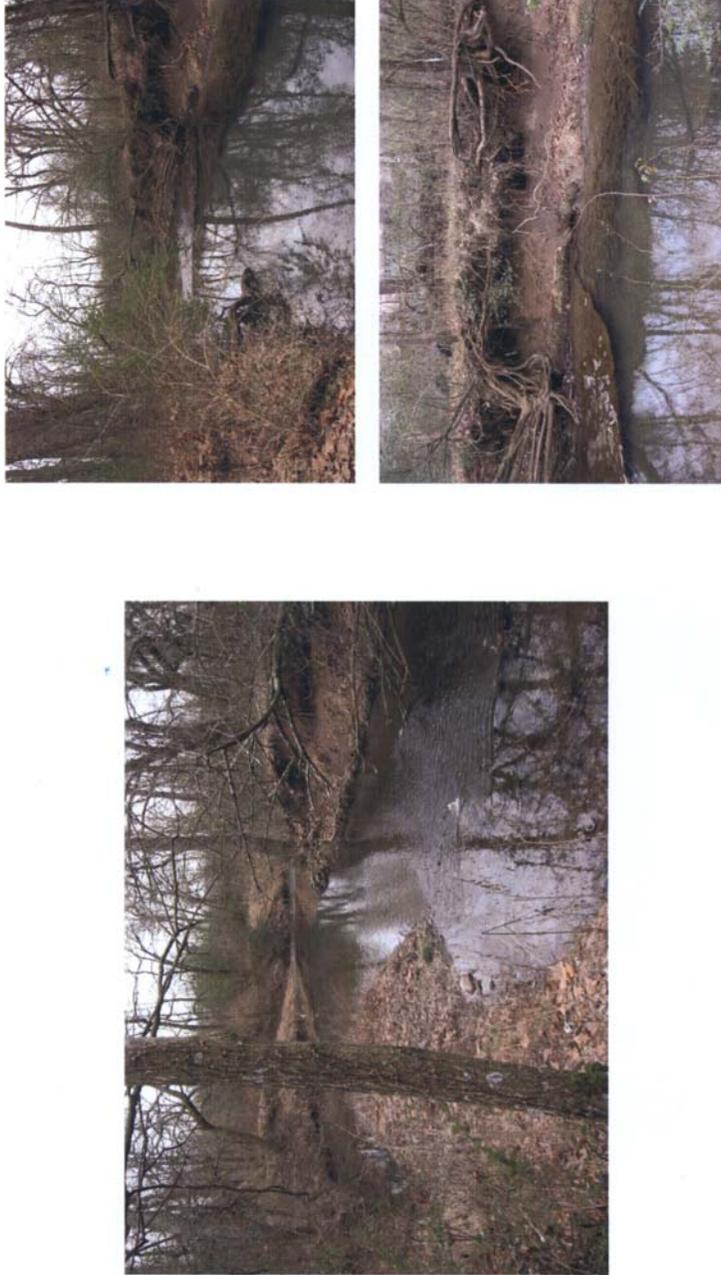


Figure 3: Creek crossing A-1

## **Fivemile Creek Crossing (A-1)**



**Figure 4:** Photo of crossing area A-1

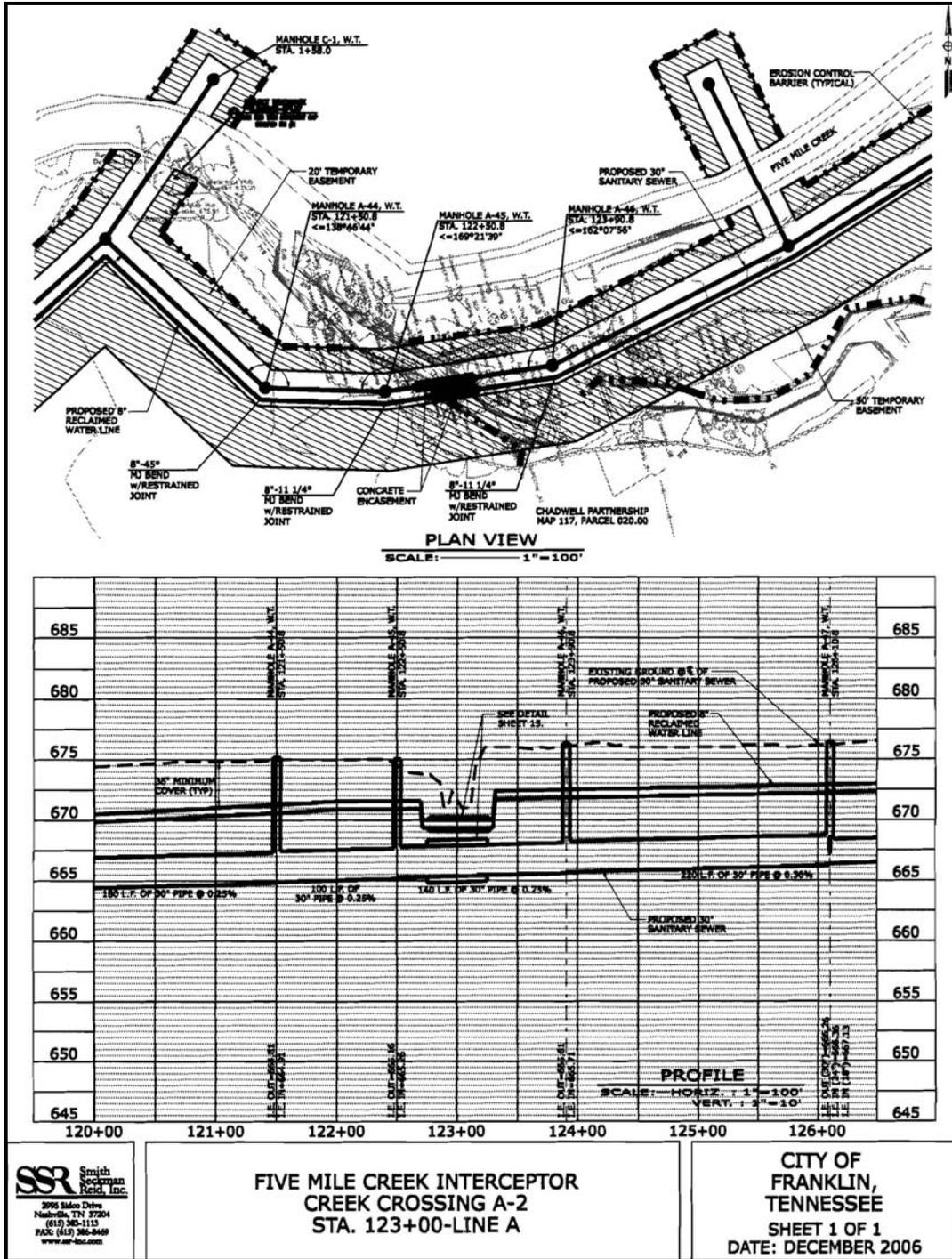
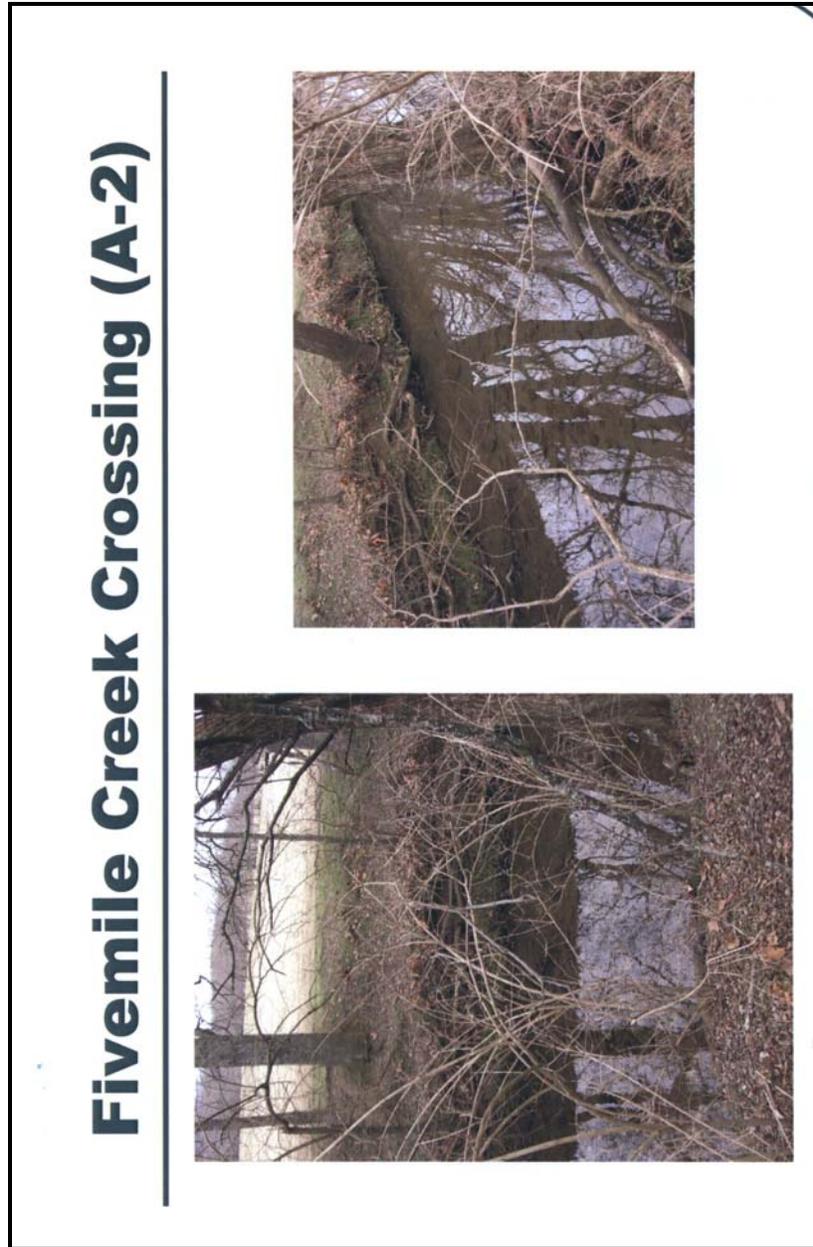
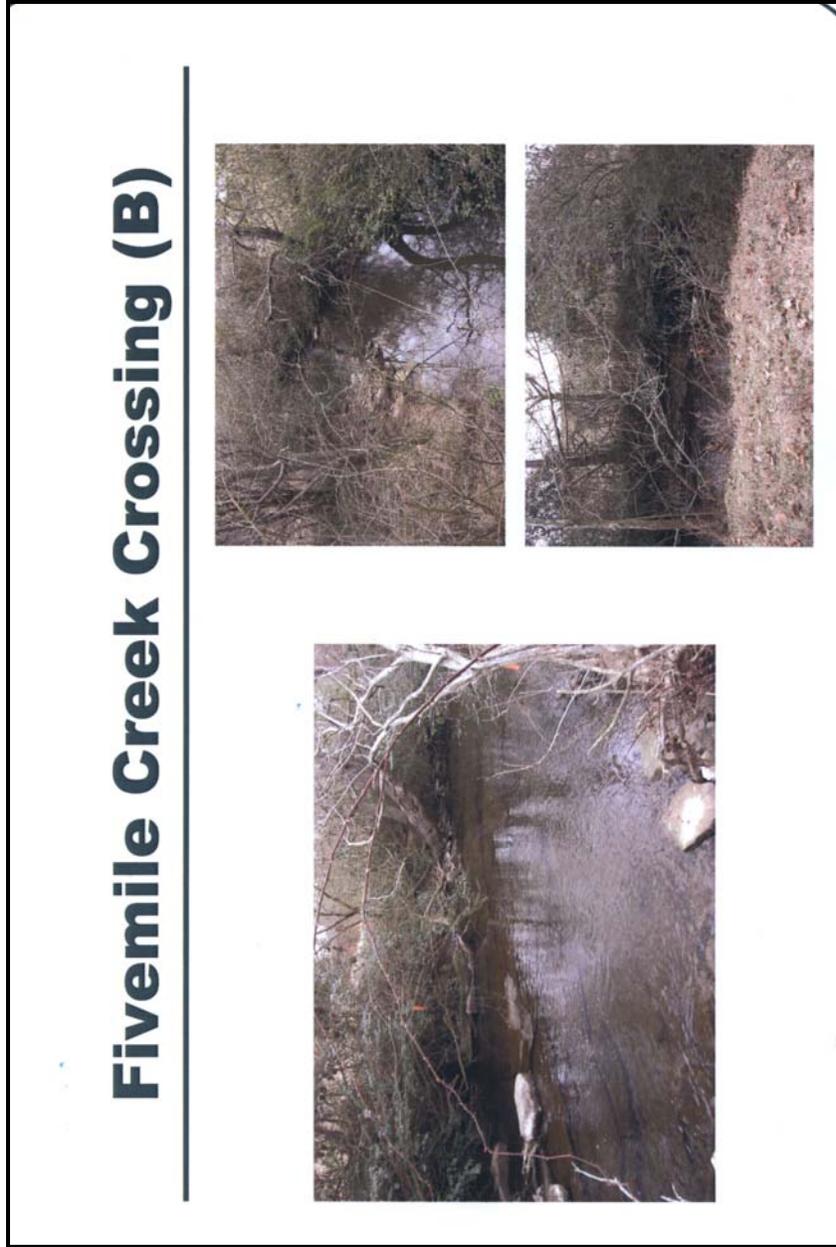


Figure 5: Crossing area A-2



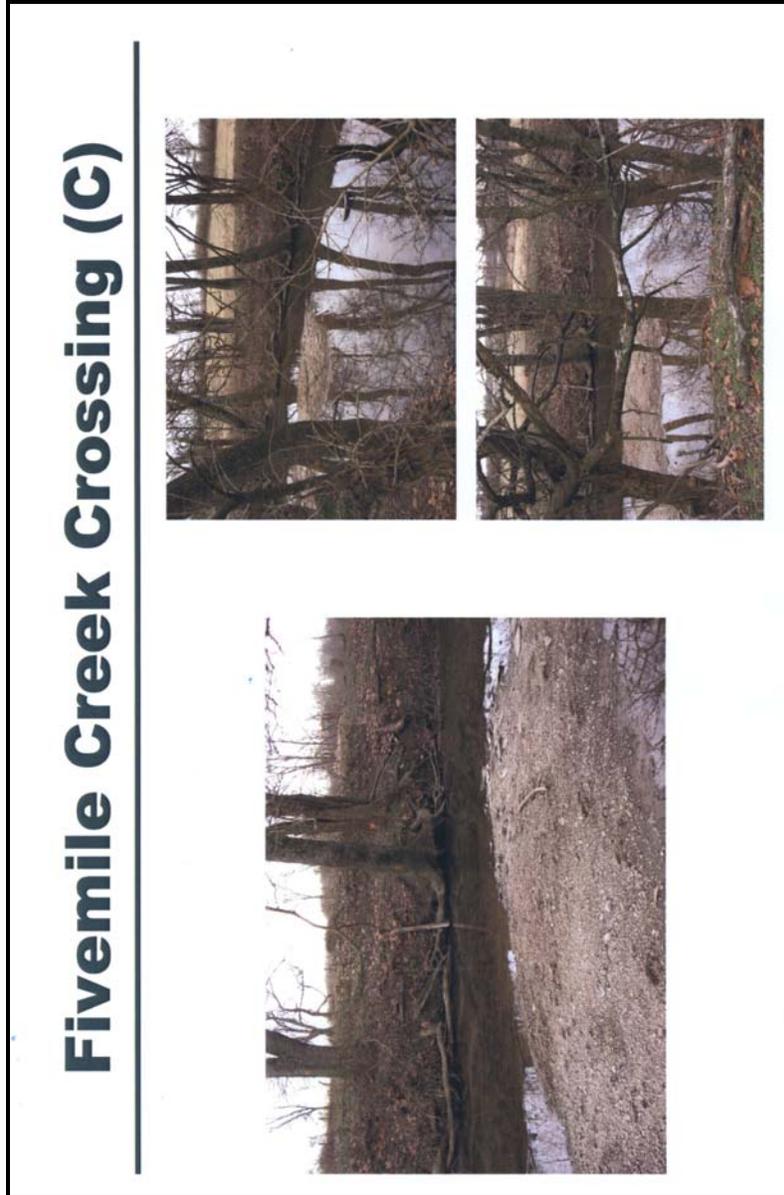
**Figure 6:** Photo crossing area A-2





**Figure 8:** Photo of crossing area B





**Figure 10:** Photo of crossing area C

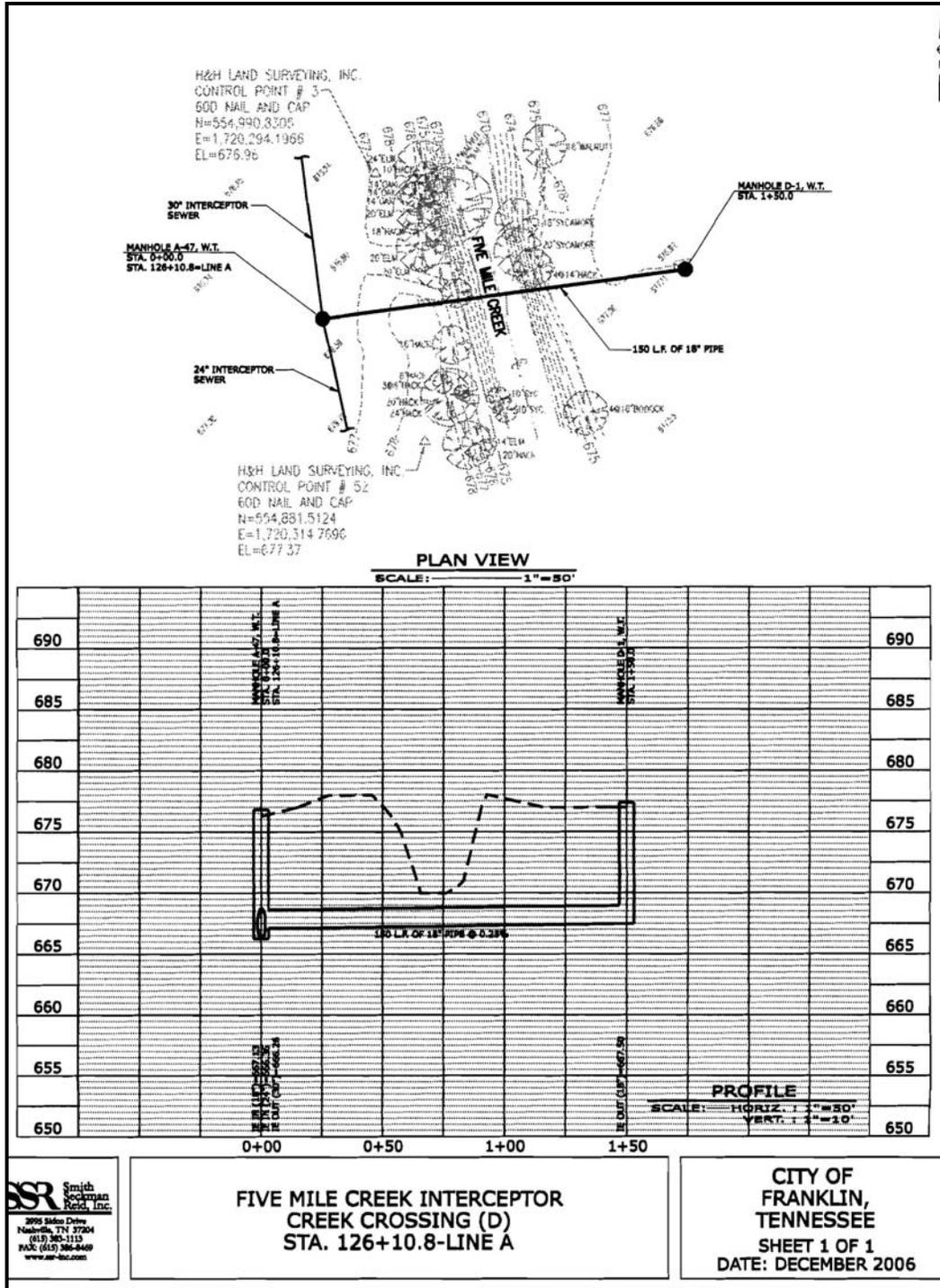
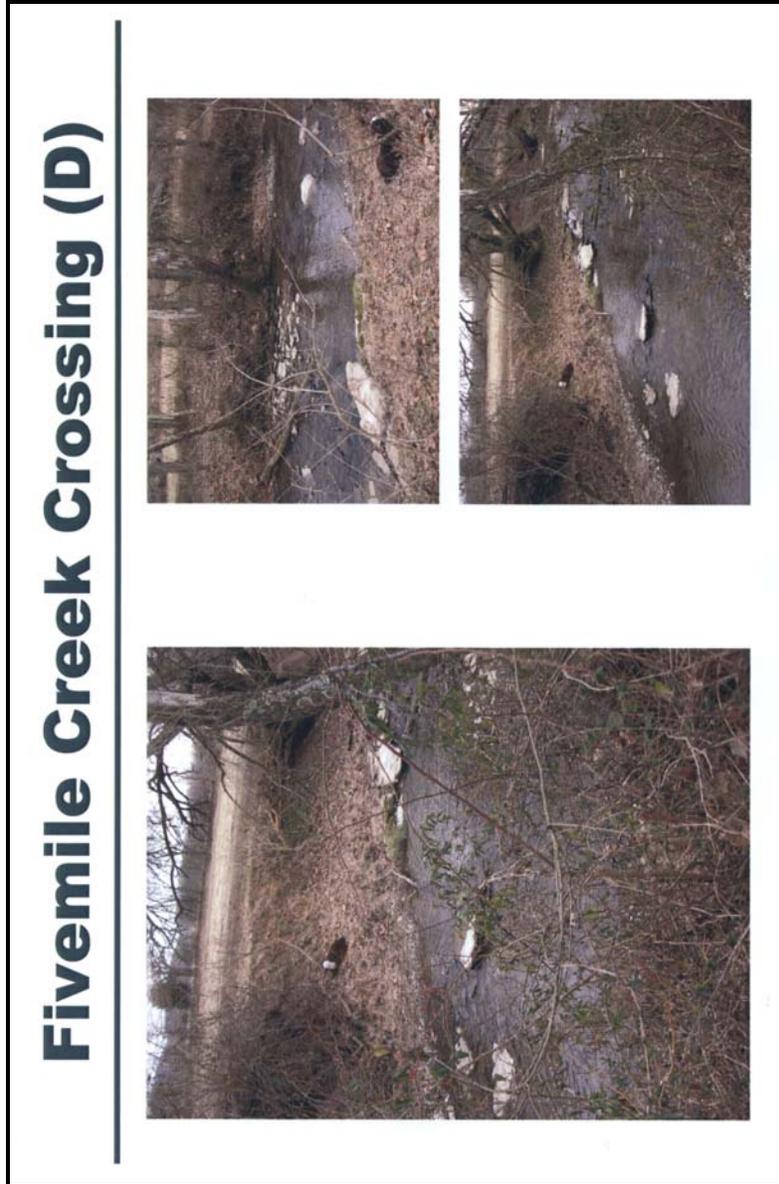


Figure 11: Crossing area D



**Figure 12:** Photos of crossing area D

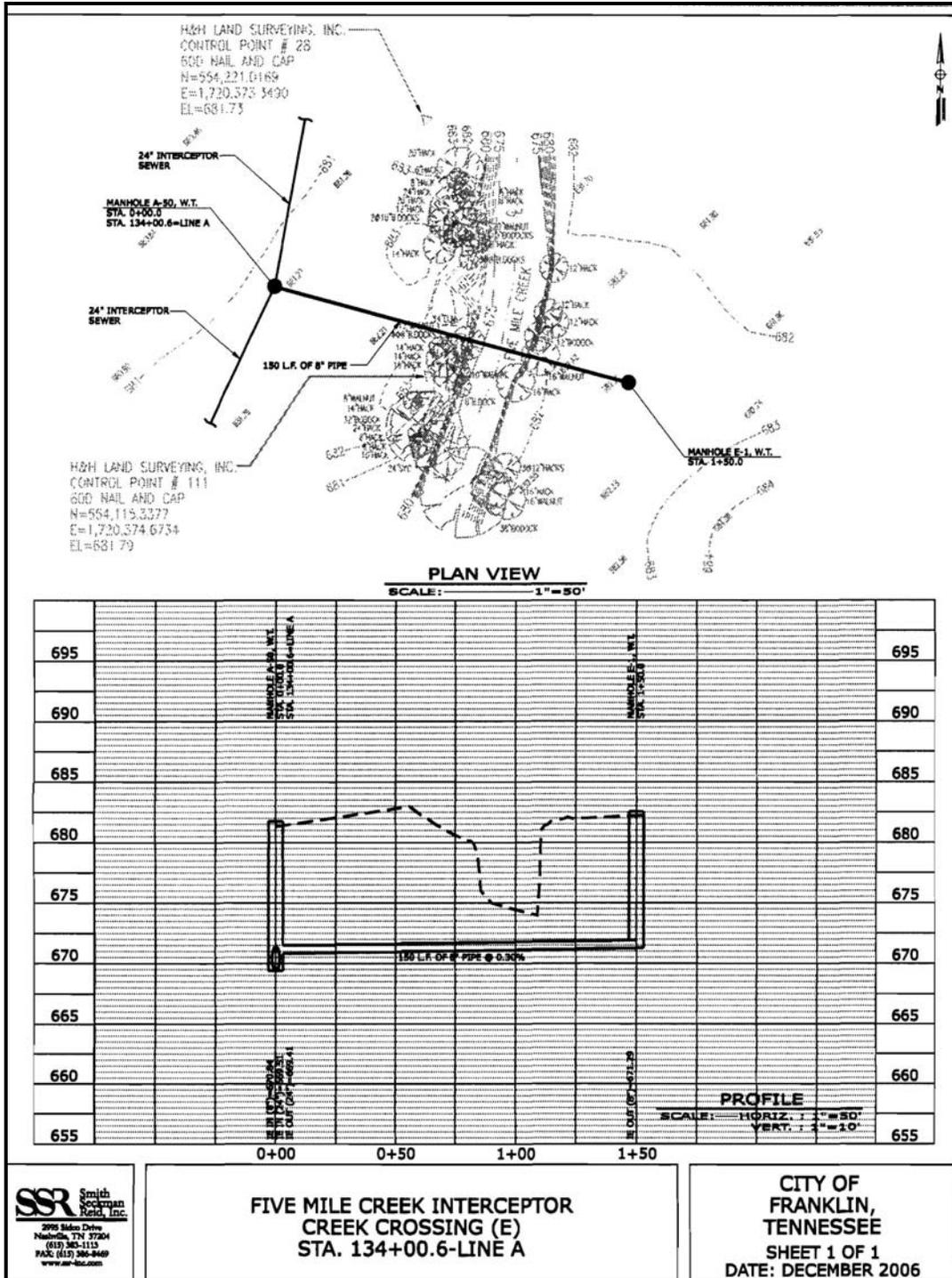


Figure 13: Crossing area E

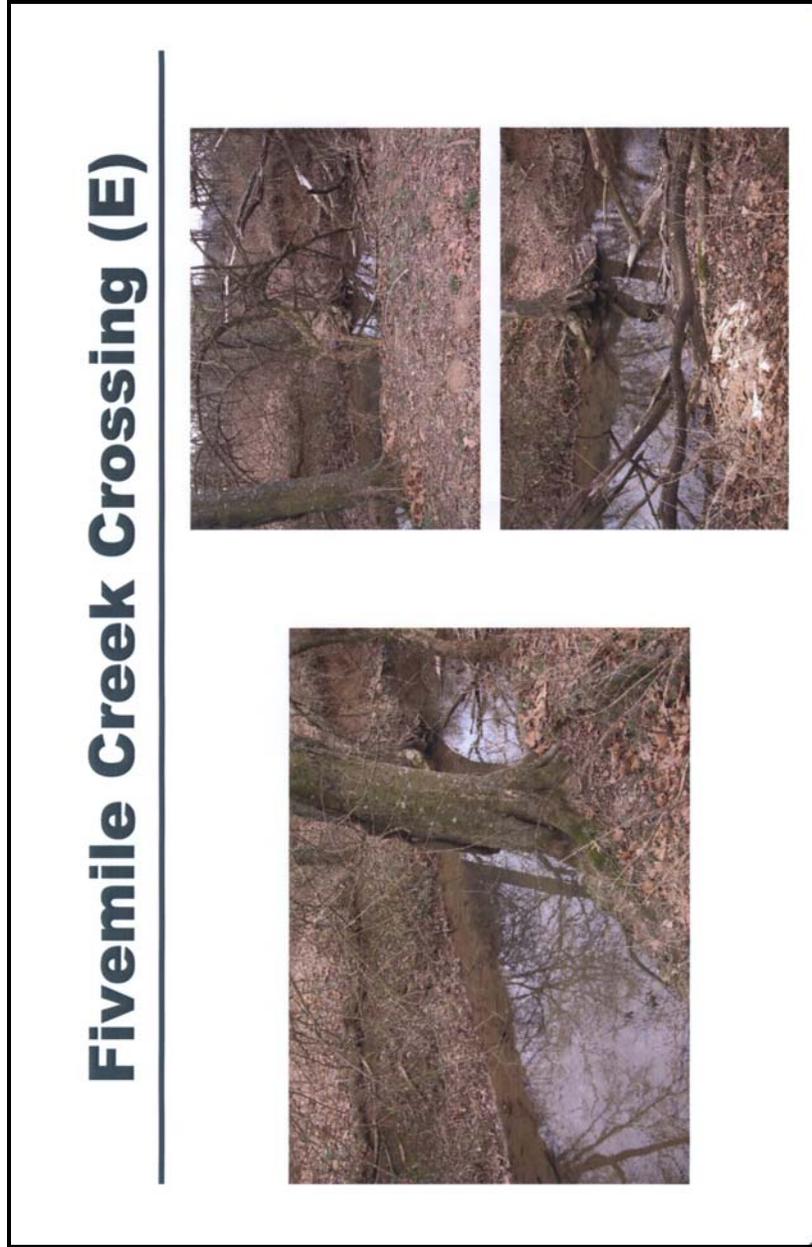
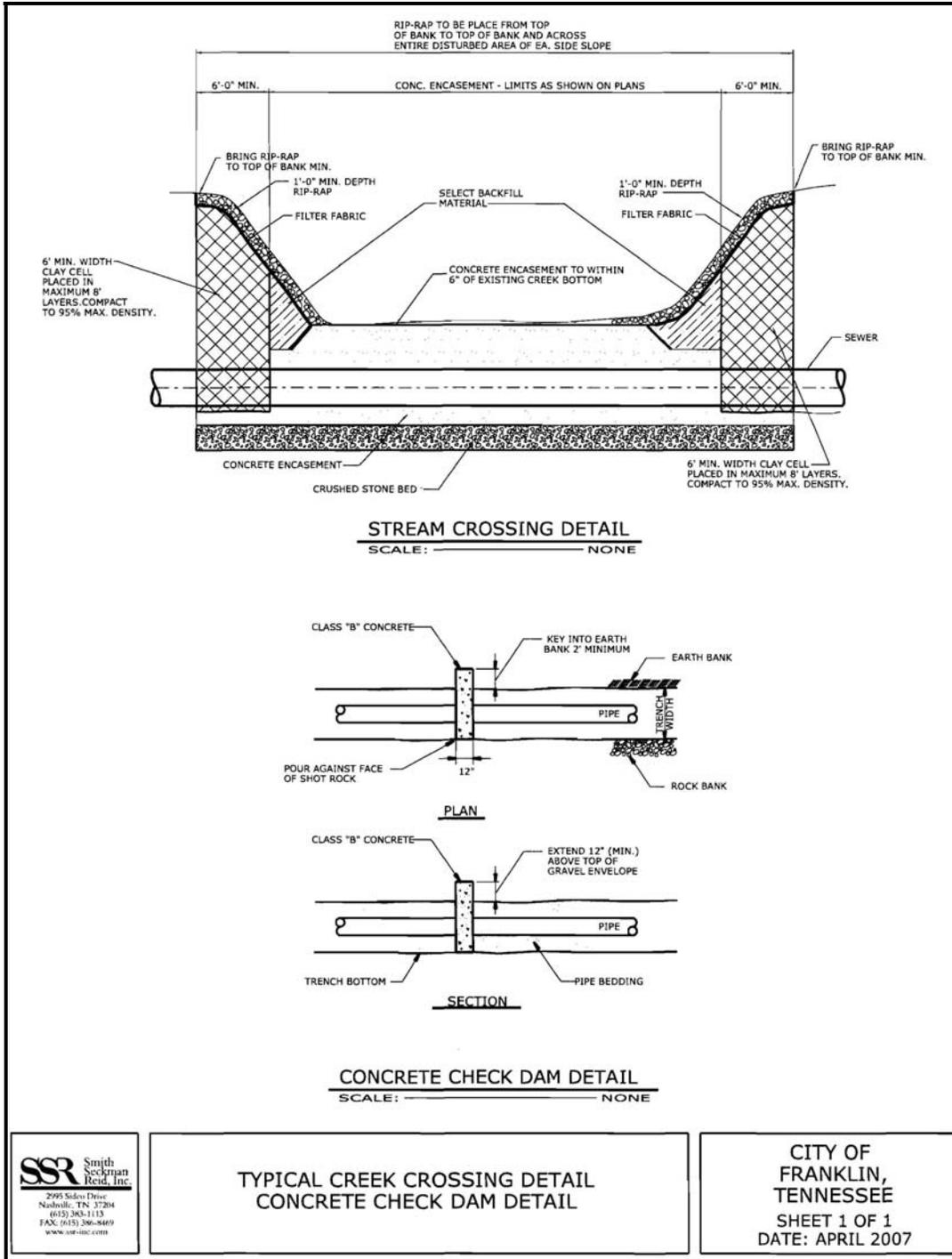


Figure 14: Photo of crossing area E



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**TYPICAL CREEK CROSSING DETAIL  
CONCRETE CHECK DAM DETAIL**

**CITY OF  
FRANKLIN,  
TENNESSEE**  
SHEET 1 OF 1  
DATE: APRIL 2007

**Figure 15:** Crossing typical details

## GENERAL DESCRIPTION AND ALTERNATIVES

### Overview:

The Fivemile Creek Interceptor project consists of approximately 12,611 LF of 30" diameter gravity sewer and 2,449 LF of 24" diameter gravity sewer being installed to serve the southern portion of the City of Franklin, Tennessee. This area of the City and portions of Williamson County along the route of the interceptor do not currently have sanitary sewer service. The existing residential developments in the area have been served by individual septic systems, many for over 15 years. As part of this project a 30-inch PVC gravity sewer will be installed across Fivemile Creek and a tributary of Fivemile Creek. In addition, four (4) 12-inch PVC gravity sewer crossings of Fivemile Creek will be utilized to deliver sanitary sewer service to the surrounding area. These smaller crossings will serve the proposed future developments within the area.

### Alternatives Considered:

The City has considered alternatives for conveying sewage down the basin and north to the treatment plant. They include the gravity sewer as proposed, gravity service on the other side of Fivemile Creek and a pump station and force main. In considering that the drainage basin includes some 10,300 acres, is divided into many sub-basins, and that there are many existing residences in the area, we realized that a forced flow sewer system would not be possible. Gravity flow allows a better approach to sewer service as different areas come online. In this case, there are four neighborhoods in close proximity to the main line that are all on septic systems. While most do not currently need of sanitary sewer service, the future will undoubtedly include rehabilitation of many existing septic systems or a need to connect to sanitary service.

The topography of the drainage basin and the location of existing homes dictated the location of the gravity sewer along Fivemile Creek. Both sides of Fivemile Creek were surveyed on foot and by instrument to find the best location for the line, to minimize creek crossings and to serve the greatest number of potential customers without future creek crossings. Our proposed alignment takes into account all of the above, making it the most feasible alternative. The average distance between the top of the bank of Fivemile Creek and the proposed line is roughly 100 feet. Approximately 40 feet separates the sewer from the river at the closest point while a separation of 250 feet is provided at the greatest point.

Details of the proposed crossings are shown in the attached plans. We have also included pictures of each crossing and a copy of the erosion control requirements and blasting requirements that were included in the specifications. Concrete check dams will be installed at all creek crossings and keyed into the rock at the bottom and sides of the ditch. The ditch banks will be rip-rapped to ensure that there is no erosion of the bank in the future.

### Controlled Blasting at Creek Crossings:

In order to excavate the rock at the creek crossings the contractor will be allowed to use controlled blasting. By line drilling the perimeter of the area to be excavated and then blasting the interior portion, the contractor will be able to better confine the area of rock fracture. Details of this method are more accurately described below:

*Where indicated on the Plans, special construction shall be used at stream crossings. Details shall be as shown on the Plans. In these areas, the Contractor shall drill a line of perimeter holes spaced no more than 2 times the diameter of the drilled holes. The perimeter holes shall be a maximum of 3" in diameter and shall not be charged with explosives. Also, the perimeter holes shall be drilled vertically and to a minimum of three (3) feet below the proposed invert of the sewer line. Inside the creek crossing zone, the Contractor shall drill holes inside the perimeter holes in a pattern suitable to rubbleize the trench rock. The Contractor shall not use more than five (5) pounds of explosives per delay for the drilled holes inside the perimeter holes in the designated creek crossing zone.*

**Figure 16:** Application description and alternatives analysis